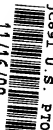


11/16/00



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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. 500.37136CX1

First Inventor or Application Identifier Yutaka NAGAI et al

Title See 1 in Addendum

Express Mail Label No.

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. ☒ * Fee Transmittal Form (e.g., PTO/SB/17)
 (Submit an original and a duplicate for fee processing)
2. ☒ Specification [Total Pages 23]
 (preferred arrangement set forth below)
- Descriptive title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
3. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 4]
4. Oath or Declaration [Total Pages 2]
- a. ☐ Newly executed (original or copy)
- b. ☒ Copy from a prior application (37 C.F.R. § 1.63(d))
 (for continuation/divisional with Box 16 completed)
- i. ☐ DELETION OF INVENTOR(S)
 Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

5. ☐ Microfiche Computer Program (Appendix)
6. Nucleotide and/or Amino Acid Sequence Submission
 (if applicable, all necessary)
- a. ☐ Computer Readable Copy
- b. ☐ Paper Copy (identical to computer copy)
- c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

7. ☐ Assignment Papers (cover sheet & document(s))
8. ☐ 37 C.F.R. § 3.73(b) Statement of Attorney
 (when there is an assignee)
9. ☐ English Translation Document (if applicable)
10. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503)
 (Should be specifically itemized)
13. ☐ Small Entity Statement(s) ☐ Statement filed in prior application
 Status still proper and desired
14. ☐ Certified Copy of Priority Document(s)
 (if foreign priority is claimed)
15. ☐ Other.

* NOTE FOR ITEMS 1 & 13 IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment

- ☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. 09/290,251
- Prior application information: Examiner N. Rosen Group / Art Unit. 2764
- For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

- ☒ Customer Number or Bar Code Label 020457 or ☐ Correspondence address below
 (Insert Customer No. or Attach bar code label here)

Name			
Address			
City	State	Zip Code	
Country	Telephone	Fax	

Name (Print/Type)	McVine Kraus	Registration No. (Attorney/Agent)	22,466
Signature	<i>McVine Kraus</i>	Date	Nov. 16, 2000

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Attachment to PTO/SB/05 (4/98) Utility Patent Application
Transmittal

1. REPRODUCTION APPARATUS AND REPRODUCTION METHOD OF DIGITAL VIDEO SIGNAL OR AUDIO SIGNAL

00712970-111500

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PTO/SB/17 (12/99)

35869 U.S. PTO
09/712970
11/16/99

FEE TRANSMITTAL for FY 2000

Patent fees are subject to annual revision
Small Entity payments (2000) may be supported by a small entity statement,
otherwise large entity fees must be paid. See Forms PTO/SB-09-12
See 37 CFR §§ 1.27 and 1.28

TOTAL AMOUNT OF PAYMENT (\$950.00)

Complete if Known

Application Number
Filing Date November 16, 2000
First Named Inventor Yutaka NAGAI et al
Examiner Name
Group / Art Unit
Attorney Docket No. 500.37136CX1

METHOD OF PAYMENT (check one)

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number 01-2135
Deposit Account Name

☐ Charge Any Additional Fee Required
Under 37 CFR §§ 1.16 and 1.17

2. ☒ Payment Enclosed:

☐ Check ☐ Money Order ☒ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Description	Fee Paid
101	690	201	345	Utility filing fee	710.00
108	310	206	165	Design filing fee	
107	480	207	240	Plant filing fee	
108	690	208	345	Resubmission filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) (\$ 710.00)

2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
14	20**	0	0
Independent Claims	6	3	240
Multiple Dependent			0

**or number previously paid, if greater. For Reissues, see below

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Description	Fee Paid
103	18	203	9	Claims in excess of 20	
102	78	202	39	Independent claims in excess of 3	
104	260	204	130	Multiple dependent claim, if not paid	
109	78	209	39	** Reissue independent claims over original patent	
110	18	210	9	** Reissue claims in excess of 20 over original patent	

SUBTOTAL (2) (\$ 240.00)

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	0.00
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	0.00
136	130	139	130	Non-English specification	0.00
147	2,520	147	2,520	For filing a request for reexamination	0.00
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	0.00
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	0.00
115	110	215	55	Extension for reply within first month	0.00
116	380	216	190	Extension for reply within second month	0.00
117	670	217	335	Extension for reply within third month	0.00
118	1,380	218	680	Extension for reply within fourth month	0.00
128	1,850	228	925	Extension for reply within fifth month	0.00
119	300	219	150	Notice of Appeal	0.00
120	300	220	150	Filing a brief in support of an appeal	0.00
121	260	221	130	Request for oral hearing	0.00
138	1,510	138	1,510	Petition to institute a public use proceeding	0.00
140	110	240	55	Petition to revive - unavoidable	0.00
141	1,210	241	605	Petition to revive - unintentional	0.00
142	1,210	242	605	Utility issue fee (or resurre)	0.00
143	430	243	215	Design issue fee	0.00
144	580	244	290	Plant issue fee	0.00
122	130	122	130	Petitions to the Commissioner	0.00
123	50	123	50	Petitions related to provisional applications	0.00
126	240	126	240	Submission of Information Disclosure Stmt	0.00
581	40	581	40	Recording each patent assignment per property (times number of properties)	0.00
145	690	245	345	Filing a submission after final rejection (37 CFR § 1.129(a))	0.00
149	690	249	345	For each additional invention to be examined (37 CFR § 1.129(b))	0.00
				Other fee (specify)	0.00
				Other fee (specify)	0.00

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 0.00)

SUBMITTED BY

Name (Print/Type) Melvin Kraus

Registration No (Attorney/Agent) 22,466

Complete if applicable

Telephone 703-312-6600

Signature [Signature]

Date Nov. 16, 2000

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REPRODUCTION APPARATUS AND REPRODUCTION METHOD

OF DIGITAL VIDEO SIGNAL OR AUDIO SIGNAL

CROSS REFERENCE TO RELATED APPLICATION

This is a continuation of U.S. application Serial No.
5 09/290,251, filed April 13, 1999, the subject matter of which
is incorporated by reference herein.

BACKGROUND OF THE INVENTION

The present invention relates to a reproduction apparatus
for a signal recorded on a medium such as an optical storage
10 medium, and in particular to a technique making it possible to
protect a copyright of the signal recorded on the medium.

A digital video disk (DVD) for recording an audio/video
(AV) signal compressed by using MPEG2 has a problem that the
AV signal could be copied without quality degradation because
15 the AV signal is handled as digital data.

In opposition to this, there has been introduced a
technique of an electronic watermark for superimposing
information such as permission, inhibition, or permission of
only one generation as to copying so that the user may not
20 sense it as described in Nikkei Electronics, February 24,
1997, pp. 99 - 123. In the above described technique, there
is described, for example, a method for conducting copying
prevention processing on analog output in accordance with a
detected signal.

25 In the case of a medium such as a broadcasting which
permits copying only once, however, it is not considered to
protect a copyright by restricting reproduction, using a

player of each user, of a pirated edition disk which is produced by copying a signal onto a DVD-R disk (capable of recording the signal once) or the like and thereafter further copying the signal from the DVD-R disk to a DVD-ROM.

5 SUMMARY OF THE INVENTION

Assuming that copying is permitted only once in broadcasting or the like, an object of the present invention is to provide a technique for preventing a pirated edition disk which is produced by recording a signal onto a DVD-R disk (capable of recording the signal once), a DVD-RAM disk (rewritable), or the like and thereafter illegally copying the recorded signal to a DVD-ROM, from being reproduced by an ordinary user's player capable of reproducing DVD-ROM, DVD-R and DVD-RAM disks.

Another object of the present invention is to report the cause of the reproduction stoppage to the user correctly in the case where reproduction is inhibited.

Originally, a medium allowing copying only once does not exist in DVD-ROM disks. In other words, it is impossible in DVD-ROMs to detect information which has permitted copying of only one generation, from video data. In the case where a signal from a medium permitting copying only once, such as broadcasting, is recorded on a recordable medium such as DVD-R/RAM and the recorded signal is copied onto a DVD-ROM to produce a pirated edition, information which has permitted copying of only one generation is detected from the video data. Therefore, in accordance with an aspect of the present invention, a means for identifying whether a disk is a DVD-R,

a DVD-RAM, or a DVD-ROM, and a means for detecting superimposed or embedded information concerning permission of copying from video data are provided. If the disk is a DVD-ROM and information identifying that copying of one generation has been permitted, such as an electronic watermark and copying protect cryptographic information is detected, then reproduction from the disk is inhibited, the reason of the reproduction stoppage is provided. So, the fact that the reproduction has been stopped due to a copyright problem is reported to the user. As a result, the above described objects are achieved.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a block circuit diagram of a DVD reproduction apparatus showing a first embodiment of the present invention;

FIG. 2 is a block circuit diagram of a DVD reproduction apparatus showing a second embodiment of the present invention;

FIG. 3 is a block circuit diagram of a DVD reproduction apparatus showing a third embodiment of the present invention; and

FIG. 4 is a block circuit diagram of a DVD reproduction apparatus showing a fourth embodiment of the present invention.

DESCRIPTION OF THE EMBODIMENTS

A first embodiment of the present invention will now be described by referring to the drawing.

FIG. 1 is a block diagram of a DVD reproduction apparatus showing an embodiment of the present invention. Numeral 101

denotes a DVD-ROM disk, a DVD-R disk, or a DVD-RAM disk having video data or the like recorded thereon. In the present embodiment, video data or audio data having copying permission information superimposed thereon or embedded therein is recorded in each of the above described disks. The superimposed copying permission information cannot be altered without significantly degrading the quality of the original video data or audio data. A disk identification code (a code for identifying whether the disk is a disk dedicated for reproduction) is further added to the video data or audio data. Numeral 102 denotes an optical pickup for detecting a signal from the disk 101. Numeral 103 denotes a preamplifier for conducting amplification, waveform equalization, and the like on a signal detected by the optical pickup. Numeral 104 denotes a demodulation circuit for converting a reproduced signal to binary values and conducting bit synchronization and demodulation. Numeral 105 denotes a RAM for temporarily storing the reproduced data thus demodulated. Numeral 106 denotes an error correction circuit for conducting error correction processing on data demodulated and stored in the RAM 105. Numeral 107 denotes a detection circuit for detecting a disk identification code recorded on the disk together with the video data or the like. Numeral 108 denotes a detection circuit for detecting superimposed copying permission information from the video data. Numeral 109 denotes a circuit for generating a disk reproduction stopping signal 114 from the detected identification code and the copying permission information. If the disk reproduction

stopping signal 114 has been generated, then the error correction circuit 106 destroys data instead of correcting data, and simultaneously generates a flag 118 indicating that an error is incorrecable. Numeral 110 denotes a message information generation circuit for generating video data (such as characters or an illustration) or an audio signal indicating that the reproduction is impossible. Numeral 111 denotes a selection circuit for selecting either data subjected to correction processing stored in the RAM 105 or message information supplied from the message information generation circuit, in accordance with the disk reproduction stopping signal 114. Numeral 112 denotes an output control circuit for conducting timing control and the like to output data from the selection circuit 111. Numeral 113 denotes a data output terminal. Numeral 115 denotes an interface for a microcomputer. Numeral 121 denotes a microcontroller for controlling a signal processing device 120 formed of components 104, 105, 106, 107, 108, 109, 110, 111, 112, 114 and 115. Numeral 122 denotes a data/signal transfer bus among the demodulation circuit 104, the RAM 105, the error correction circuit 106, the detection circuits 107 and 108, and the selection circuit 110.

Reproduction from a disk in the present DVD reproduction apparatus will hereafter be described.

A signal recorded on the disk 101 is converted to an electric signal by the pickup 102. The electric signal is subjected in the preamplifier 103 to amplification and waveform equalization. Thereafter, in the demodulation

circuit 104, the reproduced signal is converted to binary values, and subjected to bit synchronization and demodulation. The reproduced data thus demodulated is temporarily stored in the RAM 105. The stored data is subjected to error correction processing in the error correction circuit 106. The reproduced data thus corrected is sent to the copying permission information detection circuit 108. The copying permission information detection circuit 108 detects the superimposed copying permission information from the reproduced data. The copying permission information indicates which of the following types the recorded data is:

1) copying is possible; 2) copying is inhibited; and 3) copying of only one generation was permitted.

This detected information is sent to the disk reproduction stopping signal generation circuit 109. The disk identification code detection circuit detects the disk identification code added to the video data or audio data, and sends a result to the disk reproduction stopping signal generation circuit 109. The disk identification code identifies 1) a disk dedicated to reproduction, or 2) a recordable disk. If the copying permission information represents "copying of only one generation was permitted" and the disk identification code is judged to be a disk dedicated to reproduction, then the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active. Upon the disk reproduction stopping signal 114 becoming active, the error correction circuit 106 destroys the reproduced data stored in the RAM and sends a flag

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a

indicating that error is incorrecable to the microcontroller 115. Upon the disk reproduction stopping signal 114 becoming active, the message information generation circuit 110 generates video or audio message data indicating that the reproduction has been stopped due to violation of copying consent. The above described message information may include where to make contact with a copyright managing organization (such as its telephone number, address, and the like).

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The message information generation circuit 110 may be a ROM or the like storing generated data. Normally, the selection circuit 111 selects reproduced data read out from the RAM. When the disk reproduction stopping signal 114 is active, the selection circuit 111 selects the message information supplied from the message information generation circuit 110.

10

As heretofore described, in the present embodiment, it is possible to inhibit reproduction of a pirated edition disk which is produced by temporarily recording a video signal or an audio signal from broadcasting which may be permitted to be copied by only one generation onto a DVD-R or DVD-RAM, and then copying the video signal or the audio signal onto a DVD-ROM on the basis of the DVD-R or DVD-RAM.

15

Furthermore, by outputting the message signal, users can recognize that the reproduction inhibition is not caused by a failure of the reproduction apparatus or a damage of the disk, but caused by a problem of the copyright. In addition, by displaying where to make contact with the copyright managing organization, it is possible to collect information for

identifying a person who produced the pirated edition from users. Furthermore, in the case of a violation of a copyright, destruction of data is also conducted. In the case where the signal processing device 120 is formed as a single semiconductor chip, therefore, data is destroyed and cannot be read out, even if software of the micro-controller is falsified and correction impossibility flag is disregarded. If the disk reproduction stopping signal 114 in the disk reproduction stopping signal generation circuit 109 is made active, provided that the copying permission information indicates "copying of only one generation was permitted" and the disk identification code is judged to be a disk dedicated to reproduction or provided that the copying permission information is "copying is inhibited" and the disk identification code is judged to a recordable disk, then a DVD-R/RAM produced by illegally recording contents of a disk inhibited from being copied can also be prevented from being reproduced. According to the present embodiment, a reproduction apparatus capable of sufficiently protecting a copyright can be provided.

A second embodiment of the present invention will now be described.

FIG. 2 is a block diagram of a DVD reproduction apparatus showing the second embodiment.

The disk 101 reproduced in the present embodiment is intended for a DVD-ROM, a DVD-R, or a DVD-RAM. Among them, groove-shaped tracks are wobbled in the DVD-RAM/R. Therefore, a push-pull signal for tracking is modulated by the wobble.

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This wobble is required to effect tracking at the time of recording, and it does not exist in the disk dedicated to reproduction.

The present embodiment is the same as the first
5 embodiment except the following three points:

- 1) A wobble detection circuit 116 is provided;
- 2) A push-pull signal terminal is provided in the preamplifier 103, and it is connected to the wobble detection circuit 116; and
- 10 3) When the wobble detection circuit 116 has judged that there is no wobbling, or when the disk identification code detection circuit 107 has judged the disk to be a disk dedicated to reproduction and simultaneously therewith the copying permission information detection circuit 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active.

In the present embodiment, at the same time that data is reproduced in the same way as the first embodiment, wobble
20 detection is conducted by the wobble detection circuit 116. When either the wobble detection circuit 116 or the disk identification code detection circuit 107 has judged the disk to be a disk dedicated to reproduction and simultaneously therewith the copying permission information detection circuit
25 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active. Even if the disk identification code is rewritten,

therefore, reproduction is inhibited certainly.

As heretofore described, in the present embodiment, it is possible to inhibit reproduction of a pirated edition disk which is produced by temporarily recording a video signal or an audio signal from broadcasting which may be permitted to be copied by only one generation onto a DVD-R or DVD-RAM, and then copying the video signal or the audio signal onto a DVD-ROM on the basis of the DVD-R or DVD-RAM. In the present embodiment, detection of a pirated edition is conducted certainly by judging the disk to be a disk dedicated to reproduction provided that there is no wobble or provided that the identification code indicates a disk dedicated to reproduction. Even if the condition that the identification code indicates a disk dedicated to reproduction is removed from the decision conditions, however, the same effects as the those of the first embodiment are obtained.

A third embodiment of the present invention will now be described by referring to drawing.

FIG. 3 is a block diagram of a DVD reproduction apparatus showing the third embodiment.

The present embodiment is the same as the first embodiment except the following three points:

- 1) A reflectance identification circuit 117 for processing reflectance information of a disk derived by the preamplifier 103 is provided;

- 2) A terminal for outputting information of the reflectance is provided in the preamplifier 103, and the terminal is connected to the reflectance identification

circuit 117; and

3) When the reflectance identification circuit 117, the wobble detection circuit 116, or the disk identification code detection circuit 107 has judged the disk to be a disk dedicated to reproduction and simultaneously therewith the copying permission information detection circuit 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active.

At the same time that data is reproduced in the same way as the second embodiment, reflectance information is sent from the preamplifier 103 to the reflectance identifying circuit 117 in the present embodiment. The reflectance identifying circuit 117 has a threshold value for the reflectance and identifies a disk yielding a reflectance value which is equal to or larger than the threshold value, as a disk dedicated to reproduction.

When the reflectance identifying circuit 117, the wobble detection circuit 116, or the disk identification code detection circuit 107 has judged the disk to be a disk dedicated to reproduction and simultaneously therewith the copying permission information detection circuit 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active.

Even if the disk identification code is rewritten, reproduction is inhibited certainly. In the present embodiment, detection of a pirated edition is conducted

certainly by judging the disk to be a disk dedicated to reproduction provided that the reflectance is equal to or larger than the threshold value, provided that there is no wobble, or provided that the identification code indicates a disk dedicated to reproduction. Even if the disk is judged to be a disk dedicated to reproduction provided that some combination of the three conditions is satisfied, however, the same effects as the those of the first embodiment are obtained.

A fourth embodiment of the present invention will now be described by referring to drawing.

FIG. 4 is a block diagram of a DVD reproduction apparatus showing the fourth embodiment.

Instead of inputting the output of the message information generation circuit 110 to the selection circuit 111 and inputting the output of the selection circuit 111 to the output control circuit 112, the output of the message information generation circuit 110 is written into the RAM 105 via a RAM write controller 119. Components other than them are common to the third embodiment. In the case where the disk reproduction stopping signal 114 has become active, overwriting is conducted on video data or audio data which should be originally outputted in the present embodiment. As a result, there are obtained the same effects as those of the case where the output of the message information generation circuit 110 is inputted to the selection circuit 111 and the output of the selection circuit 111 is inputted to the output control circuit 112 as in the second embodiment.

Furthermore, in the first to fourth embodiments, the message information for the user is generated in the reproduction apparatus. However, the same effects are also obtained by providing a terminal for outputting the disk reproduction stopping signal 114, sending the disk reproduction stopping signal 114 to a video data display apparatus, an audio output apparatus, a compressed video data or audio data decompression apparatus, or the like, and causing the apparatus receiving the disk reproduction stopping signal 114 to generate the message information.

As heretofore described, reproduction is inhibited according to the present invention in the case where the copying permission information superimposed on the video signal or embedded therein indicates that copying of only one generation was permitted and the disk is judged to be a DVD-ROM. As a result, it is possible to inhibit reproduction from a disk which is produced by temporarily recording video or audio data permitted as to copy of one generation onto a DVD-R/RAM and thereafter illegally copying the recorded data to a DVD-ROM. In addition, in the case where reproduction is inhibited, the cause of the reproduction stoppage can be reported to the user correctly.

Throughout these embodiments, function operation of the circuit for detecting the copying permission information and the disk type, the reproduction stopping signal generation circuit, and the like can be effected by execution of them in a processor in a program form. Therefore, at least a part of the circuit configuration can be implemented in a software

fashion by execution, in the processor, of a program stored in memories.

WHAT IS CLAIMED IS:

1. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said video data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, said reproduction apparatus comprising:

demodulating means for demodulating data modulated in accordance with said modulation rule;

temporal store means for holding the data demodulated by said demodulating means;

error-correcting means for error-correcting the demodulated data stored in said temporal store means based on the error correction code, the error-corrected data being stored in said temporal store means;

reproducing means for reproducing the superimposed information concerning copying consent from the error-corrected demodulated data processed by said error-correcting means and stored in said temporal store means; and

output control means for performing output control of the reproduced data based on said reproduced information concerning copying consent stored in the temporal store means.

2. A reproduction apparatus for reproducing video data and/or audio data according to claim 1, wherein said temporal store means is a RAM.

3. A reproduction apparatus for reproducing video data and/or audio data according to claim 2, wherein said demodulating means, said error-correcting means and said copying consent information reproduction means are connected to said RAM, respectively.

4. A reproduction apparatus for reproducing video data and/or audio data according to claim 3, wherein said RAM is constituted by a single RAM.

5. A reproduction apparatus for reproducing video data and/or audio data according to claim 2, wherein said copying consent information reproducing means, said demodulating means, said error-correcting means and said RAM are integrated in a single semiconductor device.

6. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted

for the recording medium, said reproduction apparatus comprising:

demodulating means for demodulating data modulated in accordance with said modulation rule;

a temporal store means for holding the data demodulated by said demodulating means;

error-correcting means for error-correcting the demodulated data stored in said temporal store means based on an error correction code, the error-corrected data being stored in said temporal store means;

reproducing means for reproducing the superimposed information concerning copying consent from the error-corrected video data and/or audio data processed by said error-correcting means and stored in said temporal store means; and

means for stopping reproduction of the error-corrected video data and/or audio data in accordance with the information concerning copying consent from said copying consent information reproducing means;

wherein said demodulating means, said temporal store means, said error-correcting means, said copying consent information reproducing means and said reproduction stopping means are integrated in a single semiconductor device.

7. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said video data and/or audio data being

generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, said reproduction apparatus comprising:

a demodulator which demodulates data modulated in accordance with said modulation rule;

a temporal store which holds the data demodulated by said demodulator;

an error-corrector which for error-corrects the demodulated data stored in said temporal store based on the error correction code, the error-corrected data being stored in said temporal store;

a reproducer which for reproduces the superimposed information concerning copying consent from the error-corrected demodulated data processed by said error-corrector and stored in said temporal store; and

an output controller which performs output control of the reproduced data based on said reproduced information concerning copying consent stored in the temporal store.

8. A reproduction apparatus for reproducing video data and/or audio data according to claim 7, wherein said temporal store is a RAM.

9. A reproduction apparatus for reproducing video data and/or audio data according to claim 8, wherein said

demodulator, said error-corrector and said copying consent information reproducer are connected to said RAM, respectively.

10. A reproduction apparatus for reproducing video data and/or audio data according to claim 9, wherein said RAM is constituted by a single RAM.

11. A reproduction apparatus for reproducing video data and/or audio data according to claim 2, wherein said copying consent information reproducer, said demodulator, said error-corrector and said RAM are integrated in a single semiconductor device.

12. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, said reproduction apparatus comprising:

a demodulator which demodulates data modulated in accordance with said modulation rule;

a temporal store which holds the data demodulated by said demodulator;

an error-corrector which error-corrects the demodulated data stored in said temporal store based on an error correction code, the error-corrected data being stored in said temporal store;

5 a reproducer which reproduces the superimposed information concerning copying consent from the error-corrected video data and/or audio data processed by said error-corrector and stored in said temporal store; and

10 a reproduction stopper which stops reproduction of the error-corrected video data and/or audio data in accordance with the information concerning copying consent from said copying consent information reproducer;

wherein said demodulator, said temporal store, said error-corrector, said copying consent information reproducer and said reproduction stopper are integrated in a single semiconductor device.

13. A method for reproducing from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has being undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, in a reproduction apparatus comprising a demodulator which demodulates in accordance with said modulation rule; a temporal store which holds the data demodulated by said

25

demodulator; an error-corrector which for error-corrects the demodulated data stored in said temporal store based on the error correction code; a reproducer which for reproduces the superimposed information concerning copying consent from said video data and/or audio data; and an output controller which controls an output of the apparatus, said method comprising the steps:

demodulating modulated data by said demodulator;
temporarily storing the demodulated data in said temporal store;

error-correcting the demodulated data stored in said temporal store means by said error-corrector to provide error-corrected demodulated data;

reproducing the superimposed information concerning copying consent from said error-corrected demodulated data stored in said temporal store by said copying consent information reproducer; and

performing output control of the apparatus by said output controller in accordance with the information concerning copying consent reproduced by said copying consent information reproducer.

14. A method for reproducing from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has being undergone addition of an error correction code

for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, in a reproduction apparatus comprising demodulating means for demodulating in accordance with said modulation rule; a temporal store means for holding the data demodulated by said demodulating means; error-correcting means for error-correcting the demodulated data stored in said temporal store means based on the error correction code; reproducing means for reproducing the superimposed information concerning copying consent from said video data and/or audio data; and output control means for controlling an output of the apparatus, said method comprising the steps:

demodulating modulated data by said demodulation means;
temporarily storing the demodulated data in said temporal store mean;

error-correcting the demodulated data stored in said temporal store means by said error-correcting means to provide error-corrected demodulated data;

reproducing the superimposed information concerning copying consent from said error-corrected demodulated data stored in said temporal store means by said copying consent information reproducing means; and

performing output control of the apparatus by said output control means in accordance with the information concerning copying consent reproduced by said copying consent information reproducing means.

ABSTRACT OF THE DISCLOSURE

A reproduction apparatus and method for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon. The video data and/or audio data is generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium. The reproduction apparatus includes a demodulator for demodulating data modulated in accordance with the modulation rule, a temporal store for holding the data demodulated by the demodulator, an error-corrector for error-correcting the demodulated data stored in the temporal store, based on an error correction code with the error-corrected data being stored in the temporal store. A reproducer reproduces the superimposed information concerning copying consent from the error-corrected demodulated data processed by the error-corrector and stored in the temporal store and an output controller performs output control of the reproduced data based on the reproduced information concerning copying consent stored in the temporal store.

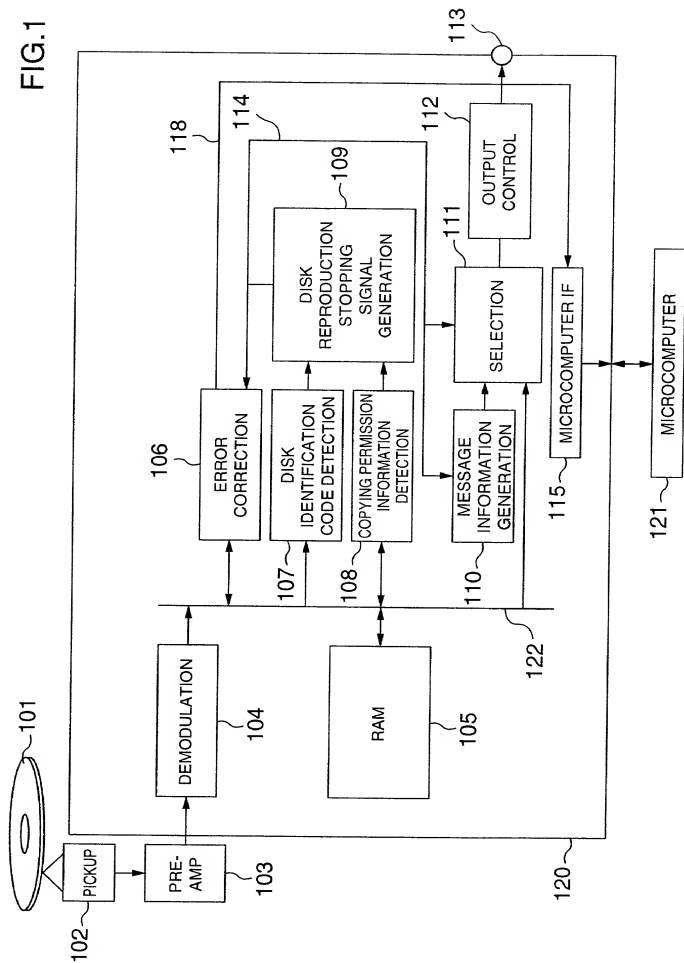
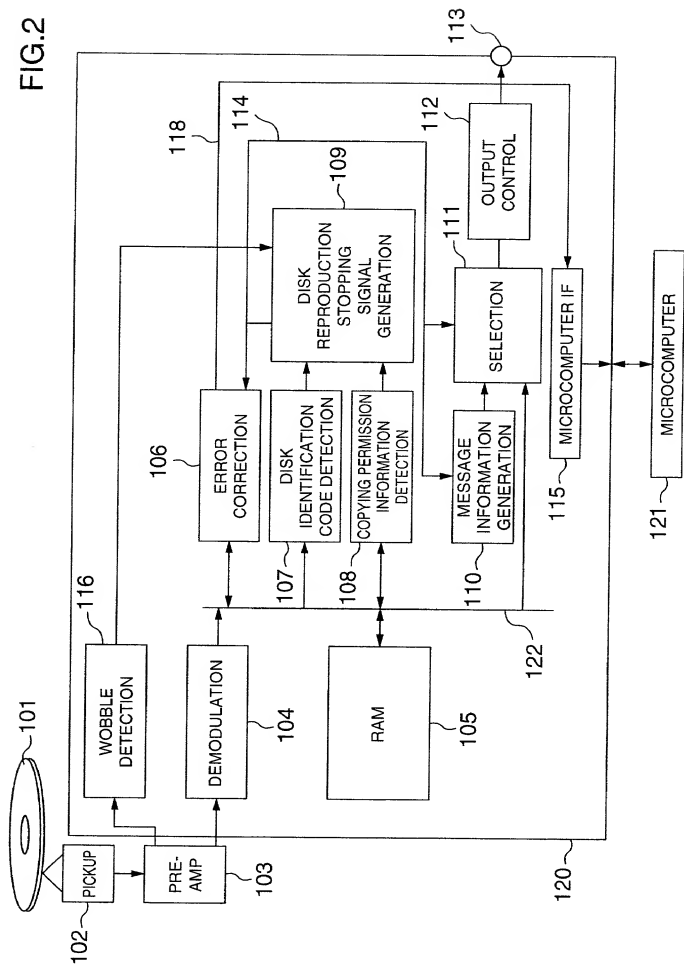
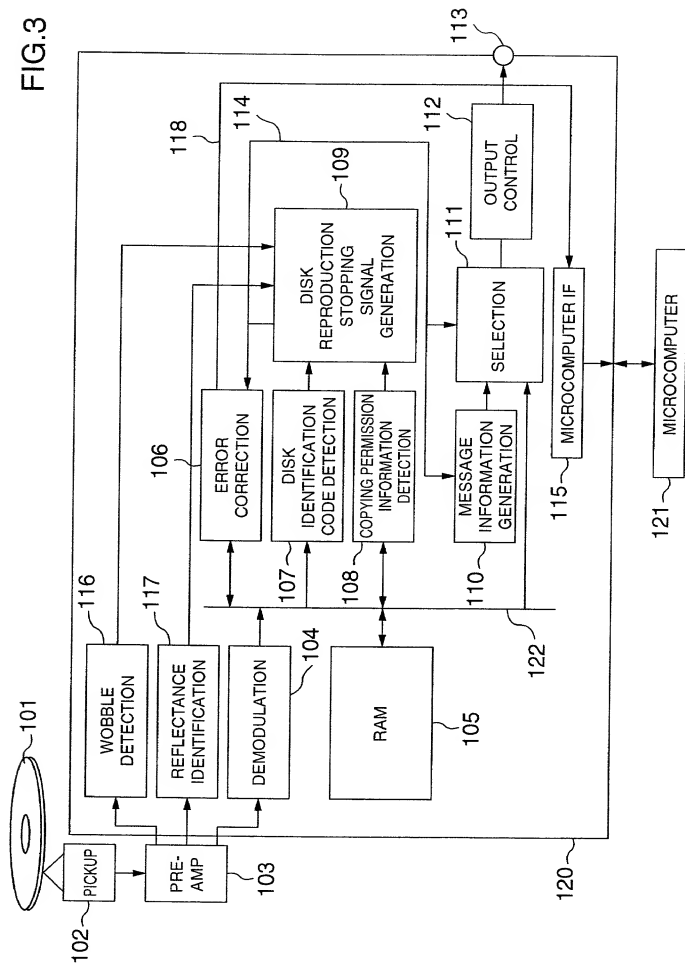


FIG. 2





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DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

"REPRODUCTION APPARATUS AND REPRODUCTION METHOD OF DIGITAL
VIDEO SIGNAL OR AUDIO SIGNAL"

the specification of which (check one)

☒

is attached hereto.

☐

was filed on _____

as Application Serial No. _____

and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

10-102385 (Number)	Japan (Country)	14 April, 1998 (Day/Month/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status: patented, pending, abandoned)
_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status: patented, pending, abandoned)
_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status: patented, pending, abandoned)
_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status: patented, pending, abandoned)

(Continued on Page 2)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United State Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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